I Claim:

1. A method of producing an increase in the refractive index of a portion of an optical fiber, the method comprising exposing said portion to a UV light source, thereby causing an increase in the refractive index of said portion and exposing a segment of said portion to localized heat, thereby reducing said increase in the refractive index of said segment said heat having sufficient energy to decrease said increase in the refractive index.

2. A method as in claim 1 further including the step of placing a phase mask between said light source and said fiber to produce a grating in said portion of said fiber, said grating being a plurality of bands on said fiber having a refractive index higher than the refractive index of a majority of said fiber.

3. A method as in claim 1 wherein said localized heat is produced by coherent light which is absorbed at a surface of said fiber such that absorption of said coherent light at said surface produces heat which diffuses to a longitudinal center of said fiber.

4. A method as in claim 3 wherein said coherent light is from a laser.

5. A method as in claim 4 wherein said coherent light is from a CO_2 laser.

6. A method of altering an optical waveguide to achieve a desired optical signal response from said waveguide, the method comprising:

a) inducing an increase in refractive index in a portion of said waveguide;

b) measuring an optical signal response from said waveguide;

c) heating a localized section of said portion to reduce said increase in said section if said optical signal response is not the desired optical signal response; and

d) repeating steps b) and c) until the desired optical signal response is achieved.

7. A method as in claim 6 wherein said heating is accomplished by using light which is absorbed at a surface of said waveguide to produce localized heat.

8. A method as in claim 6 further including the step of heating at least said portion to stabilize said change prior to step b).

9. A system for altering an optical waveguide having Bragg gratings induced on a portion thereof to obtain a desired optical signal response, the system comprising:

- means for measuring an optical signal response from said waveguide;

- heating means for heating a localized section of said portion, said heating means being capable of at least partially erasing said Bragg gratings from said section by heating said section;

- data processing means for processing data received from said measuring means and for controlling said heating means;

wherein

if said optical signal response measured by said measuring means is not substantially equal to said desired optical signal response, said data processing means causes said heating means to at least partially reduce the refractive index of sections of said portion until the desired optical signal response is obtained.

10. A system as in claim 9 wherein said waveguide has a stable Bragg grating.

11. A system as in claim 9 wherein said heating means is a laser.

12. A system as in claim 9 wherein said heating means is a CO_2 laser.

13. A method of altering an optical waveguide with a portion having Bragg gratings to achieve a desired optical signal response from said waveguide, the method comprising:

a) measuring an optical signal response form said waveguide;

b) heating a localized section of said portion to at least partially erase a section of said Bragg grating if said optical signal response is not the desired optical signal response;

c) repeating steps a) and b) until the desired optical signal response is achieved.